

Amendments to the Drawings

The attached proposed sheet of drawings includes changes to Fig. 7 and replaces the original drawing sheets of Figs. 6 and 7.

Fig. 7 has been amended to cancel the reference number "18" on the right side of the drawing.

REMARKS

Examiner Arora is thanked for the thorough examination and search of the subject patent application. The making final of the restriction requirement is noted. Claims to the non-elected species are canceled or withdrawn. Applicants reserve the right to file divisional applications to the non-elected claims.

Claims 1-33, 40-51 and 76-89 are pending; Claims 1-3, 5-28, 31, 40-45 and 47-51 are currently amended; Claims 4, 29, 30, 32, 33 and 46 are withdrawn and currently amended; Claims 34-39 and 52-75 are canceled; Claims 76-89 are newly added. It is believed that no new matter is added.

The Specification has been amended to complete the information for the related patent application, in the paragraph under the section of "Related Patent Application" on page 1 and in the paragraph bridging pages 2 and 3 .

The Specification has been amended to add the subject matter that "The contacts 16 may be an aluminum pad" in the first paragraph on page 7, which is supported in original Claim 13.

The Specification has been amended to add the subject matter that "The gold pads 40 may be on the aluminum pad 16 exposed by an opening in the passivation layer 18" in the second paragraph on page 12, which is supported in original Claim 14.

Response to Specification Objections

Reconsideration of Specification Objection is requested as, in the second paragraph on page 9, the wordings of "Solder pads 31 are formed" are amended to those of "Solder 31 is formed". Withdrawal of Specification Objection is respectfully requested.

Response to Claim Objections

Reconsideration of Claim Objection is requested as Claim 49 is currently amended. Withdrawal of Claim Objection is respectfully requested.

Response to Claim Rejections under 35 U.S.C. 103

Applicants respectfully traverse the rejections for at least the reasons set forth below.

Response to Claims 1-8

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As currently amended, independent claim 1 is recited below:

1. A circuit component comprising:
 - a semiconductor substrate;
 - a transistor in and on said semiconductor substrate;
 - a power bus over said semiconductor substrate;
 - a ground bus over said semiconductor substrate;
 - a capacitor over said semiconductor substrate;
 - a first solder connection connecting said capacitor to said power bus; and
 - a second solder connection connecting said capacitor to said ground bus.
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Reconsideration of Claims 1-8 rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi (US6,921,980) in view of Liang (US6,461,895) is requested based on the following remarks.

Applicants respectfully assert that the circuit component claimed in Claim 1 patentably distinguishes over the citations by Nakanishi et al. (US6,932,980) in view of Liang et al. (US6,461,895).

Nakanishi et al. teach a circuit component 1 comprising multiple traces 5 over a semiconductor substrate 2, a discrete electronic component 8 over said semiconductor substrate 2, and solder connections 7 connecting said discrete electronic component 8 to said multiple traces 5. ~ See Figs. 1(a) and 1(b), col. 3, lines 58-64, col. 4, lines 5 and 6 ~

However, Nakanishi et al. fail to teach said discrete electronic component 8 may be a capacitor, as claimed in Claim 1.

Furthermore, Nakanishi et al. fail to teach a capacitor over a semiconductor substrate may be connected to power and ground buses through solder connections, as claimed in Claim 1.

Also, Liang et al. fail to teach a capacitor over a semiconductor substrate may be connected to power and ground buses through solder connections, as claimed in Claim 1.

Withdrawal of the Claim Rejection under 35 U.S.C.103(a) to Claim 1 is respectfully requested. Applicants respectfully submit independent Claim 1 patentably distinguishes over the prior art references, and should be allowed. For at least the same reasons, dependent Claims 2-8 patentably define over the prior art as well.

Response to Claims 9-14

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As currently amended, independent claim 9 is recited below:

9. A circuit component comprising:
 - a semiconductor substrate;
 - a transistor in and on said semiconductor substrate;

a first contact pad over said semiconductor substrate;
a passivation layer over said semiconductor substrate, a first opening in said passivation layer exposing a top surface of said first contact pad, wherein said passivation layer comprises nitride;
a second contact pad connected to said top surface, wherein the position of said second contact pad from a top perspective view is different from that of said first contact pad; and
a capacitor over said passivation layer, wherein said capacitor is connected to said second contact pad.

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Reconsideration of Claims 9-12 rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi (US6,921,980) in view of Liang (US6,461,895) and of Claims 13 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi in view of Liang and further in view of Thomas (US5,346,858) is requested based on the following remarks.

Applicants respectfully assert that the circuit component claimed in Claim 9 patentably distinguishes over the citations by Nakanishi et al. (US6,932,980) in view of Liang et al. (US6,461,895).

Nakanishi et al. teach a circuit component 1 comprising an insulating film 4 over a semiconductor substrate 2, a first opening in said insulating film 4 exposing a top surface of a first contact pad 3; a second contact pad connected to said top surface of said first contact pad 3, wherein the position of said second contact pad from a top perspective view is different from that of said first contact pad 3; and a discrete electronic component 8

over said insulating film 4, wherein said discrete electronic component 8 is connected to said second contact pad. ~ See Figs. 1(a) and 1(b) and col. 3, lines 58-64 ~

However, Nakanishi et al. teach said insulating film 4 is a polyimide layer of 5 micron thick, but fail to teach, hint or suggest said insulating film 4 is a passivation layer comprising nitride, as claimed in Claim 9. Nakanishi et al. fail to teach said first contact pad 3 is exposed by an opening in a passivation layer comprising nitride, but teach said first contact pad 3 is exposed by an opening in said insulating film 4 comprising polyimide. An insulating film comprising nitride is under said insulating film 4. ~ See col. 4, lines 22-23 ~

Besides, Nakanishi et al. fail to teach said discrete electronic component 8 may be a capacitor, as claimed in Claim 9. Nakanishi et al. fail to teach a capacitor over a passivation layer may be connected to a second contact pad connected to a first contact pad exposed by an opening in a passivation layer comprising nitride, wherein the position of said second contact pad from a top perspective view is different from that of said first contact pad, as claimed in Claim 9.

Also, Liang et al. fail to teach a capacitor over a passivation layer may be connected to a second contact pad connected to a first contact pad exposed by an opening in a passivation layer comprising nitride, wherein the position of said second

contact pad from a top perspective view is different from that of said first contact pad, as claimed in Claim 9.

Withdrawal of the Claim Rejection under 35 U.S.C.103(a) to Claim 9 is respectfully requested. Applicants respectfully submit independent Claim 9 patentably distinguishes over the prior art references, and should be allowed. For at least the same reasons, dependent Claims 10-14 patentably define over the prior art as well.

Response to Claims 15-33

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As currently amended, independent claim 15 is recited below:

15. A circuit component comprising:
- a semiconductor substrate;
 - a transistor in and on said semiconductor substrate;
 - a first metal pad over said semiconductor substrate;
 - a second metal pad over said semiconductor substrate, wherein said second metal pad is used to be wirebonded thereto;
 - a capacitor over said semiconductor substrate; and
 - a solder connecting said capacitor to said first metal pad.

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Reconsideration of Claims 15, 17-27 and 29-32 rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi (US6,921,980) in view of Liang (US6,461,895) and further in view of Lin (US6,303,423), and of Claims 16 and 28 rejected under 35 U.S.C.

103(a) as being unpatentable over Nakanishi in view of Liang, further in view of Lin, and still further in view of Murdeshwar (US6,267,290) is requested based on the following remarks.

Applicants respectfully assert that the circuit component claimed in Claim 15 patentably distinguishes over the citations by Nakanishi et al. (US6,932,980) in view of Liang et al. (US6,461,895) and further in view of Lin (US6,303,423).

Nakanishi et al. teach a circuit component 1 comprising a first metal pad over a semiconductor substrate 2, a second metal pad over said semiconductor substrate 2, and a solder 7 connecting a discrete electronic component 8 to said first metal pad, wherein said second metal pad is used to be wirebonded thereto. ~ See Figs. 1(a), 1(b), 3(a) and 3(b), col. 3, lines 58-64, col. 4, lines 5 and 6 ~

However, Nakanishi et al. fail to teach, hint or suggest that said discrete electronic component 8 may be a capacitor, as claimed in Claim 15.

Neither Nakanishi et al., Liang et al. nor Lin teach a capacitor may be connected to a first metal pad through solder for a circuit component with a second metal pad used to be wirebonded thereto, as claimed in Claim 15. The structure claimed in Claim 15 has multiple advantages, not explored by Nakanishi et al., Liang et al. or Lin.

Typically, a wirebonded wire is so long and slim that the response for a transistor in and on a semiconductor substrate could not be fast and great noises could occur during signal, ground or power transmission. To solve the above drawbacks, a capacitor can be set over said semiconductor substrate to immediately respond to the need of said transistor. Neither Nakanishi et al., Liang et al. nor Lin teach the problem due to wirebonding can be solved by setting a capacitor over a semiconductor substrate using solder.

Withdrawal of the Claim Rejection under 35U.S.C.103(a) to Claim 15 is respectfully requested. Applicants respectfully submit independent Claim 15 patentably distinguishes over the prior art references, and should be allowed. For at least the same reasons, dependent Claims 16-33 patentably define over the prior art as well.

Response to Claims 40-51

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As currently amended, independent claim 40 is recited below:

40. A method of fabricating a circuit component comprising:

providing a semiconductor substrate, a transistor in and on said semiconductor substrate, a first contact pad over said semiconductor substrate, a passivation layer over said semiconductor substrate, an opening in said passivation layer exposing a top surface of said first contact pad, and a second contact pad connected to said top surface, wherein the position of said second contact pad from a top view is different from that of said first contact pad and wherein said passivation layer comprises nitride; and

mounting a capacitor over said passivation layer, wherein said capacitor is connected to said second contact pad.

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Reconsideration of Claims 40 and 42-51 rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi (US6,921,980) in view of Liang (US6,461,895) and further in view of Lin (US6,303,423), and of Claim 41 rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi in view of Liang, further in view of Lin, and still further in view of Murdeshwar (US6,267,290) is requested based on the following remarks.

Applicants respectfully assert that the method claimed in Claim 40 patentably distinguishes over the citations by Nakanishi et al. (US6,932,980) in view of Liang et al. (US6,461,895) and further in view of Lin (US6,303,423).

Nakanishi et al. teach the method for fabricating a circuit component 1 comprising providing an insulating film 4 over a semiconductor substrate 2, a first opening in said insulating film 4 exposing a top surface of a first contact pad 3, and a second contact pad connected to said top surface of said first contact pad 3, wherein the position of said second contact pad from a top perspective view is different from that of said first contact pad 3; and mounting a discrete electronic component 8 over said insulating film 4, wherein said discrete electronic component 8 is connected to said second contact pad. ~ See Figs. 1(a) and 1(b) and 2(a)-2(e) and col. 3, lines 58-64 ~

However, Nakanishi et al. teach said insulating film 4 is a polyimide layer of 5 micron thick, but fail to teach, hint or suggest said insulating film 4 is a passivation layer comprising nitride, as claimed in Claim 40. Nakanishi et al. fail to teach said first contact pad 3 is exposed by an opening in a passivation layer comprising nitride, but teach said first contact pad 3 is exposed by an opening in said insulating film 4 comprising polyimide. An insulating film comprising nitride is under said insulating film 4. ~ See col. 4, lines 22-23 ~

Besides, Nakanishi et al. fail to teach said discrete electronic component 8 may be a capacitor, as claimed in Claim 40. Nakanishi et al. fail to teach the step of mounting a capacitor over a passivation layer, wherein said capacitor is connected to a second contact pad connected to a first contact pad exposed by an opening in a passivation layer comprising nitride, wherein the position of said second contact pad from a top perspective view is different from that of said first contact pad, as claimed in Claim 40.

Also, both Liang et al. and Lin fail to teach the step of mounting a capacitor over a passivation layer, wherein said capacitor is connected to a second contact pad connected to a first contact pad exposed by an opening in a passivation layer comprising nitride, wherein the position of said second contact pad from a top perspective view is different from that of said first contact pad, as claimed in Claim 40.

Withdrawal of the Claim Rejection under 35U.S.C.103(a) to Claim 40 is respectfully requested. Applicants respectfully submit independent Claim 40 patentably distinguishes over the prior art references, and should be allowed. For at least the same reasons, dependent Claims 41-51 patentably define over the prior art as well.

CONCLUSION

Some or all of the pending claims are believed to be in condition for allowance. Accordingly, allowance of the claims and the application as a whole are respectfully requested.

It is requested that should Examiner Arora not find that the Claims are now Allowable that he call the undersigned at 845 452-5863 to overcome any problems preventing allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'SBA', written in a cursive style.

Stephen B. Ackerman, Reg. No. 37,761

Attachment: Replacement sheet